A LIST OF COCCINELLIDÆ OF BRITISH COLUMBIA

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The following list is based primarily on the material collected by the author in summers of 1931 and 1934. This list is admittedly incomplete, and further collecting will undoubtedly increase the number of species recorded from British Columbia. The fauna of Coccinellidæ of British Columbia has, however, more than usual interest, due to the fact that many common American species find there the northern and northwestern limits of their distribution. The publication of this note is, therefore, considered justifiable.

Unless otherwise stated, the specimens referred to below were collected by the author, and are preserved in his collection. The symbol "ES" stands for the list of Coccinellidæ published (anonymously) in the *Bulletin* of British Columbia Entomological Society, No. 1, 1906, pp. 3–4 (reprinted in 1926). NM refers to the specimens in the collection of the National Museum (Washington, D. C.) examined by the author. For species that are known to occur in the regions north of British Columbia, this fact is stated with appropriate references.

1. *Hyperaspis lateralis* Muls. subsp. *montanica* Csy. Pavilion, July 25, 1 sp.; Lake Skaha, June 25, 2 sp. In one of the specimens the discal spot is almost wanting.

2. *Hyperaspis postica* Lec. Lake Skaha, June 25, 3 sp.; Kaslo, Aug. 2, 2 sp.; Victoria, Goldstream (ES, "*Hyperaspis posticata* Lec.").

3. Hyperaspis n. sp. Chilliwack, July 24, 1 male. This species is related to *quadrivittata* Lec. and *moerens* Lec., and may be a subspecies of one of these. Pronotum black with triangular yellow spots in the anterior angles; elytra black with a sharply defined longitudinal wedge-shaped yellow spot in the apical part, located closer to the suture than to the external margin.

4. *Brachyacantha ursina* Fabr. Keremeos, June 26, 1 male. The only representative of this species from British Columbia

differs from the typical form of the species in having a more oblong body, the external margins of the elytra subparallel in the anterior half of their length, the yellow markings on the pronotum somewhat reduced in width, and the yellow markings on the elytra smaller than those in the typical *ursina*. The juxtascutellar spot is triangular, the discal one is small, transversally oval. This form seems to be at least subspecifically distinct from the typical *ursina*, but more material is needed before its status can be established. *Brachyacantha 10-pustulata* Melsh. mentioned in ES undoubtedly belongs here.

5. *Psyllobora vigintimaculata* Say subsp. *taedata* Lec. Campbell River, Aug. 14, 2 sp.; Nanaimo, Aug. 2, 2 sp.; Victoria, Aug. 13, 3 sp.; Vancouver, July 28, 56 sp.; Capillano Canyon, Aug. 1, 50 sp.; Chilliwack, July 24, 1 sp. Common in the coastal region on leaves of deciduous trees. About one-third of the specimens examined have black spots on the elytra, the remainder have spots of various shades of brown. Individuals of this species found in California are all pale brown, those from the eastern states are black. This species is found also in Alaska (Skagway, June 7, 1897, Harrington collector, NM).

6. *Macronaemia episcopalis* Kby. Kaslo, Aug. 2, 1 sp. I have seen this species also from Alberta (Cypress Hills, F. S. Carr collector), and from Idaho (Parma, H. P. Lanchester collector).

7. *Hippodamia tredecimpunctata* L. Chilliwack, Aug. 24, 2 sp.; Victoria, Wellington, Vancouver, Sumas (ES). This species is common in northern Asia (including Kamchatka) and in Europe, but is not so far known from Alaska.

8. *Hippodamia parenthesis* Say. Merritt, June 27, 1 sp.; Wellington (ES). Yukon Territory: Whitehorse, May 30, 1916, J. A. Kushe collector, 2 sp. (NM).

9. *Hippodamia lunatomaculata* Mots. Pavilion, July 25, 12 sp.; Kamloops, July 30, 1 sp.; Lake Skaha, June 25, 5 sp.; Keremeos, June 26, 2 sp. Common in the interior on xerophytic grassy vegetation, especially on Artemisia. Most individuals have the elytral pattern similar to that represented in Fig. 43e of Johnson's work (Carnegie Inst. Washington, publ. 122, 1910), but one specimen from Lake Skaha has the pattern represented in Fig. 43g of the same work.

10. *Hippodamia sinuata* Muls. subsp. *spuria* Lec. Chilliwack, June 24, 2 sp.; Wellington, Duncans, Vancouver, Vernon (ES). The listing of the typical *sinuata* Muls. for British Columbia (Victoria, ES) is almost certainly based on an erroneous determination, since it is a Californian species.

11. *Hippodamia convergens* Guer. Keremeos, June 26, 1 sp.; Lake Skaha, June 25, 2 sp.; Kaslo, Aug. 2, 8 sp.; Vernon (ES). All individuals examined have the typical elytral pattern, except one from Kaslo which has spotless elytra.

12. *Hippodamia caseyi* Joh. Nanaimo, Aug. 2, 1 sp.; 150 Mile House, July 26, 1 sp.; Lake Canim, July 28, 1 sp.; Pavilion, July 25, 3 sp.; Yale, July 24, 3 sp.; Keremeos, June 26, 1 sp.; Arrowhead, July 31, 1 sp. This species is frequently misnamed *lecontei* Muls. *Hippodamia lecontei* Muls. is a species occurring in the southwestern United States, and its finding in British Columbia (ES) is doubtful. I am obliged to Dr. P. H. Timberlake who has determined this species for me.

13. *Hippodamia quinquesignata* Kby. Victoria, Aug. 13, 1 sp.; Nanaimo, Aug. 2, 18 sp.; Departure Bay, Aug. 2, 3 sp.; Cowichan, Aug. 13, 1 sp.; Quesnell, July 27, 1 sp. Alaska: Chitina, July 14, 1 sp.; Fairbanks, July 1934, 2 sp., F. W. Went collector. Individuals from Vancouver Island have most of the spots constituting the typical pattern much reduced in size or absent, with the exception of the humeral band ($\frac{1}{2}+3+1$) which is uneven in its outline, and sometimes (27%) broken into separate spots. In Alaskan individuals the pigmentation is much heavier.

14. *Hippodamia quinquesignata* Kby. subsp. *puncticollis* Csy. Keremeos, June 26, 1 sp.; Arrowhead, July 31, 4 sp. This race differs from the typical form by its smaller size, a heavy, even humeral band, broadly fused oblique spots $4+5$, and a less pronounced punctuation of the elytra. Dr. P. H. Timberlake kindly informs me that the genitalia of this race are not different from those of the typical quinquesignata.

15. *Hippodamia moesta* Lec. Chilliwack, July 24, 3 sp.; Victoria, Goldstream, Wellington, Vancouver (ES). On ferns. One of the specimens from Chilliwack has solid black elytra, the other two have a yellow spot in the subapical region.

16. *Hippodamia moesta* Lec. subsp. *bowditchi* Joh. Kaslo, Aug. 2, 4 sp.; between Hope and Okanogan (Johnson 1910, p. 46). Leng and Timberlake consider *bowditchi* Joh. to be subspecifically related to *moesta* Lec. This is probably correct, although no intergrades seem to be known.

17. *Coccinella novemnotata* Hbst. subsp. *oregona* Casey. Nanaimo, Aug. 2, 3 sp.; Merritt, June 27, 1 sp.; Lake Skaha, June 25, 5 sp.; Keremeos, June 26, 12 sp.; Wellington, Vancouver (ES). The elytral spots very small, spots 1 and 2 sometimes missing. This species is found on Queen Charlotte Island (Keen, Canadian Entomologist, 27, 1895, p. 317).

18. *Coccinella prolongata* Cr. Keremeos, June 26, 1 sp.; Vernon (ES).

19. *Coccinella californica* Mann. Victoria, Aug. 13, 3 sp.; Cowichan, Aug. 13, 1 sp.; Nanaimo, Aug. 2, 24 sp.; Departure Bay, Aug. 2, 7 sp.; Vancouver, July 24, 2 sp.; Abbotsford, July 24, 3 sp.; Chilliwack, July 24, 5 sp. Common in the coastal region on grassy vegetation.

20. *Coccinella johnsoni* Csy. Victoria, 1 sp. (California Acad. Sci. collection); Chilliwack, July 24, 1 sp. The specimen from Chilliwack has the humeral spot missing.

21. *Coccinella transversoguttata* Fald. Quesnel, July 27, 1 sp.; Pavilion, July 25, 2 sp.; Vancouver, Vernon, Penticton, Merritt, Fort McLeod (NM). On xerophytic vegetation. Yukon Territory: Whitehorse, Carcross, White Pass, Dawson (NM). Alaska: Skagway, Chitina Glacier, New Rampart House (NM), Chitina, July 14, 1 sp.; Fairbanks, July 1934, 19 sp., F. W. Went collector. Alaskan individuals are larger and more heavily pigmented than those from British Columbia.

22. *Coccinella transversoguttata* Fald. subsp. *nugatoria* Muls. Keremeos, June 26, 238 sp.; Lake Skaha, June 25, 2 sp. On Carduus. Vancouver, Merritt, Penticton, Vernon (NM). All intermediates between subsp. *nugatoria* and the typical form are present. 72% of the individuals examined have the humeral band intact and the discal spot more or less transverse; 20% have the humeral band broken into separate spots; in 7% the humeral band is broken, and the humeral spot is missing; 1% have the discal spot missing but the humeral band intact.

23. *Coccinella nivicola* Men. subsp. *alutacea* Csy. Keremeos, June 26, 6 sp.; Victoria, Vancouver, Fort McLeod (NM). On Carduus. This form may easily be confused with the preceding species; its differs by the absence of any trace of humeral spot, and by an oblique and distinctly transverse discal spot. In doubtful cases an examination of the genitalia has to be resorted to.

24. *Coccinella trifasciata* L. 150 Mile House, July 26, 1 sp.; Pavilion, July 25, 1 sp.; Chilliwack, July 24, 1 sp.; Victoria, Glacier, Agassiz, Vernon (NM). The species is found also in Yukon Territory (Whitehorse, Dawson, NM) and in Alaska (22 miles below Eagle, NM).

25. *Coccinella trifasciata* L. subsp. *subversa* Lec. Abbotsford, Aug. 5, 9 sp.; Chilliwack, July 24, 22 sp.; Yale, July 24, 9 sp. 42% of the specimens examined have no spots on the elytra (or only a remnant of the scutellar spot), 56% possess a discal spot, and 2% have a subhumeral band, similar to that characteristic for subsp. *juliana* Muls. Common in the coastal region in fields and on meadows.

26. *Adalia bipunctata* L. Nanaimo,Aug. 2, 1 sp.; Chilliwack, July 24, 3 sp.; Lake Skaha, June 25, 1 sp.; Wellington, Vancouver (ES). All specimens have the typical elytral pattern. The ES lists also *Adalia frigida* Schn. and *Adalia annectans* Cr. as occurring in British Columbia. The occurrence of the former is very probable, since it is found also in Alaska (Rampart House, NM). As to *annectans,* it is supposed to be a southern species, although I find the distinction between it and *frigida* very questionable.

27. *Cycloneda munda* Say. Victoria, Aug. 13, 1 sp.; Nanaimo, Aug. 2, 4 sp.; Vancouver, July 28, 2 sp.; Capillano Canyon, Aug. 1, 2 sp.; Yale, July 24, 1 sp.; Keremeos, June 26, 1 sp. The ES lists *Cycloneda sanguinea* L. rather than *munda* as the species occurring in British Columbia. This is probably a misidentification, although the conventional character used for distinguishing these species (the pronotal pattern) is not to be depended upon too much. The genus badly needs a revision.

28. *Cleis picta* Rand. subsp. *minor* Csy. Merritt, June 27, 1 sp.; Lake Skaha, June 25, 2 sp. On pines. The specimens

examined have a pale brown elytral pattern, which is a characteristic of the "species" *minor* Csy. I doubt the validity of *minor* not only as a species, but even as a subspecies. Since, however, the western representatives of this species do differ from the eastern ones in coloration and perhaps in size, sinking the name *minor* Csy. as a mere synonym is premature.

29. *Mysia randalli* Csy. Pavilion, July 25, 1 sp.; Merritt, June 27, 1 sp.; on pine trees. I have seen this species also from Moscow, Idaho (5 sp., Paul Rice collector). The ES lists *Mysia horni* Cr. rather than *randalli*. It is, of course, possible that both are found in British Columbia. Casey segregated the American species of the genus Mysia from the palaearctic ones under a generic name Neomysia Csy. I regard Neomysia entirely superfluous, and treat it as a synonym of *Mysia* Muls.

30. *Exochomus septentrionis* Weise. Lake Skaha, June 25, 5 sp.; Keremeos, June 26, 1 sp. On pines. All specimens have heavy black markings, being somewhat similar to the subsp. *davisi* Leng. of this species.

In addition to the species enumerated above, my British Columbia collection contains three species of the genus Scymnus Kug. At the present, however, the taxonomy of the American species of Scymnus is in a state of utter confusion, and will remain so until the genus is revised, and the types of the numerous "species" described by Casey are reexamined. Considering that assigning doubtful names to species in faunistic lists does far more harm than good, I refrain from such a venture.

A general conclusion regarding the fauna of Coccinellidæ of British Columbia may be formulated as follows. As far as it is known, this fauna contains not a single species that does not occur in regions South or East of British Columbia. This is tantamount of saying that no known species finds its southern or eastern limits within the confines of this Province. On the other hand, most of the British Columbia species that extend further North are widely distributed, mostly circumpolar, forms. Real arctic species are not known to occur in British Columbia.